

## **II. Response to the Office Action Dated December 21, 2004**

### **A. Status of the Claims**

Claims 23-66 were pending upon the issuance of the Action dated December 21, 2004. No claims have been amended, canceled, or added. Claims 23-66 are therefore currently pending.

### **B. The Anticipation Rejection is Overcome**

#### **1. A Summary of the Rejection**

The Action continues to reject claims 42-45 and 48-54 under 35 U.S.C. § 102(b) as being anticipated by JP 10-25471 ("JP '471"). The Action contends that JP '471 discloses a photochromic latex that includes a naphthopyran compound formed by using an initiator and a monomer, wherein a biphasic layer is formed. The Action admits, however, that this reference does not disclose the size of the latex particles. *See* the Action, page 1. To supplement the deficient teachings, the Action contends that the JP '471 reference "would inherently have the same latex particle size as in the present invention since the same components are used therein." *Id.* Alternatively, the Action contends that it would have been obvious to vary the particle size. *Id.*

Applicants traverse. Claims 42-45 and 48-54 are not anticipated nor rendered obvious by JP '471.

#### **2. JP '471 Does Not Anticipate Nor Render Obvious Claims 42-45 and 48-54**

Applicants' arguments made in section I[B](4) of Applicants' previous November 19, 2004, response are incorporated into this section by reference. These arguments show that JP '471 does not anticipate claims 42-45 and 48-54, either expressly or inherently. This is

confirmed by the Action's own admission that "JP '471 **differs** from the present invention in that the size of the latex particles are not specifically disclosed." The Action, page 2.

The Action also raises a new obviousness contention in view of the JP '471 reference by stating:

To the extent that JP '471 may not have the same particle size, it would be obvious to vary the particle size of the latex in order to optimize the photochromic properties of the latex.

*Id.* at page 1. Other than this statement, the Action provides no evidence or argumentation to support this obviousness contention.

For instance, the Action is completely devoid of any evidence of a motivation to modify the JP '471 reference to vary the particle size to Applicants' claimed range. Further, there is no evidence that a person of ordinary skill in the art would have a reasonable expectation of success in making such modifications. These are burdens that the Action bears, not Applicants. MPEP § 2142 ("The examiner bears the initial burden of factually supporting any *prima facie* case of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of non-obviousness.").

In fact, as discussed in Applicants' previous response and discussed further below, the Postle reference cited by the Action indicates that there is no motivation to modify the particle size to Applicants' claimed range nor a reasonable expectation of success that such modifications would work. Additionally, the Action even admits that "JP '471 differs from the present invention in that the size of the latex particles are not specifically disclosed." The Action, page 2.

Therefore, the Action has failed to show the three elements necessary to establish a *prima facie* case of obviousness. Because of this, the present obviousness rejection cannot be maintained and should be withdrawn.

## **C. The Obviousness Rejections Are Overcome**

### **1. A Summary of the Rejections**

The Action continues to reject claims 42-45 and 48-54 under 35 U.S.C. § 103(a) as being unpatentable over JP '471 in view of U.S. Patent 4,578,305 to Postle *et al.* The Action also contends that claims 42-45 and 48-54 are further obvious over these references in view of a declaration (the Maisonnier Declaration) submitted in a non-related application (U.S. Application No. 09/991,773 (the '773 Application)). The Action admits that the primary reference, JP '471, "differs from the present invention in that the size of the latex particles are not specifically disclosed." The Action, page 2.

To supplement the deficient teachings of JP '471, the Action improperly cites to the Maisonnier declaration and states that "the teachings therein state that the typical latex formed by different methods of emulsion, still have a particle size of 150-250 nm." *Id.* at page 2. The Action also contends that Postle *et al.* discloses "that variation of the particle size of the latex in a photochromic latex will have significant impact on films formed thereby." From this, the Action concludes that Applicants' claimed invention is obvious.

Applicants traverse this rejection. Claims 42-54 are not obvious over the cited references.

### **2. The Action Has Not Presented the Required Evidence to Support the Obviousness Rejections**

The Action has not presented the required evidence to support a *prima facie* case of obviousness. Applicants incorporate the arguments made in section I[C](4) of Applicants' previous response filed with the U.S. Patent Office on November 19, 2004, into this section by reference. These arguments confirm that the Action has failed to present the required evidence

necessary to support a *prima facie* case of obviousness. Applicants therefore request that the obviousness rejection be withdrawn.

**3. The Action's Use of the Maisonnier Declaration Is Improper**

The Action's use of the Maisonnier Declaration to support the obviousness rejection is improper. As Applicants have previously argued, the Maisonnier Declaration is not prior art. The Declaration does not fall under any subsection of 35 U.S.C. § 102. Applicants have not adopted the Maisonnier Declaration in the present application. This application is not related to the 09/991,773 application nor does it contain the same inventive entity. No admissions have been made by the Applicants in the present case that the Declaration is even applicable to the rejections presented in this case.

Because the Maisonnier Declaration is not prior art, it is improper for the Action to rely on it to support the present obviousness rejection.

**4. The Cited References Fail To Teach Every Element of the Present Invention**

A necessary requirement in establishing a *prima facie* case of obviousness mandates a showing by the Action that every element is taught or suggested by the cited references. This has not been done. Applicants' arguments made in section I[C](5) of Applicants' previous November 19, 2004, response are incorporated into this section by reference.

**5. There is No Motivation to Combine or Modify the Cited References**

An additional requirement for the Action to establish a *prima facie* case of obviousness mandates a showing that there is a motivation to combine or modify the teachings of JP '471 with the teachings of Postle *et al.* This has not been done. Applicants' arguments made in section I[C](6) of Applicants' previous November 19, 2004, response are incorporated into this section by reference.

Applicants would also like to address the Action's recent statements concerning a motivation to modify the particle sizes. The Action states:

Clearly the teaching of Postle that the variation of the particle size of the latex in a photochromic latex will have a significant impact upon films formed thereby (see columns 5 and 6) is clear motivation for one of ordinary skill to vary the particle size.

The Action, page 5.

Postle does not provide a "clear motivation" to vary the particles sizes to Applicants' claimed range (*i.e.*, "having an average size between 50 and 400 nm."). If anything, Postle appears to teach away from Applicants' claimed range. For instance, Postle discloses that "all the copolymer latexes prepared by the inventively used process have an average particle size of **less than** 0.05  $\mu\text{m}$  [*i.e.*, less than 50 nm]." Postle *et al.*, col. 5, lines 49-51 (emphasis added).

Further, the data in Postle show that latexes having a particle size greater than 50 nm fail to work for their intended purpose. In this regard, Postle *et al.* states:

However in the case of the sheet which comprises copolymer (5) [which includes particles having an average size of 92 nm] the milkyiness of the coating **precludes** a noticeable darkening of the non-covered part of the sheet when exposed to the u.v.-lamp.

*Id.* at col. 6, lines 24-28 (emphasis added). The fact that Postle shows that particle sizes within Applicants' claimed range fail to work is strong evidence that there is no motivation to vary the particles sizes to Applicants' claimed range. MPEP § 2143.01 ("If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to made the proposed modification.") (citing *In re Gordon*, 733 F.2d 900 (Fed. Cir. 1984)).

Therefore, the Action's contention that Postle discloses a "...clear motivation for one of ordinary skill to vary the particle size" is incorrect and contrary to settled patent law principles.

Because the Action's arguments for a motivation to modify are incorrect, the present obviousness rejections cannot be maintained.

**6. There is No Reasonable Expectation of Success That Such A Combination Would Work**

The Action is also required to show a reasonable expectation of success that the combinations of the cited references would work. This has not been done. Applicants' arguments made in section I[C](7) of Applicants' previous November 19, 2004, response are incorporated into this section by reference.

Applicants also note that the Action fails to present any evidence showing a reasonable expectation of success. The burden is on the Action, not Applicants, to provide this evidence. MPEP § 2142. This lack of evidence mandates a withdrawal of the present obviousness rejection. *Id.*

Additionally, the Action's own statements show that there is no reasonable expectation of success if the particle sizes were to be modified to Applicants' claimed range. For instance, the Action states "Postle teaches that variation of the particle size of the latex in a photochromic latex will have a significant impact upon films formed thereby...." The Action, page 2. This statement appears to support a conclusion that varying the particle size is unpredictable. In fact, this is confirmed by the data in Postle showing that variations in particle size produces latexes that do not work for their intended purpose. *See above.* This is strong evidence of no reasonable expectation of success. MPEP § 2143.02 (noting that "at least some degree of predictability is required" to establish obviousness).

Because all three of the necessary elements required to establish a *prima facie* case of obviousness have not been established by the Action, the present obviousness rejections cannot

be maintained. For at least the reasons stated above, the obviousness rejections for claims 42-45 and 48-54 are overcome and should be withdrawn.

#### **D. The Double Patenting Rejection Is Overcome**

The Action continues to maintain its double patenting rejection of claims 24-27, 36-39, 55-57, and 62 as being unpatentable over the claims of U.S. Patent No. 6,770,710 (the '710 patent), previously Application No. 09/991773. The Action incorrectly contends that these claims are not patentably distinct from each other because the method of the claims use the same components as in the present invention.

Applicants traverse. Claims 24-27, 36-39, 55-57, and 62 are patentably distinct from the claims in the '710 patent. The Arguments made in section I[D] of Applicants' previous November 19, 2004, response are incorporated into this section by reference. Applicants also make the following additional arguments.

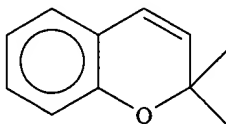
Present independent claim 24 is directed towards:

A method for preparing a latex with photochromic properties comprising:

preparing **an aqueous emulsion (I)** of a composition A comprising:

at least one organic monomer Z, wherein said at least one monomer is further defined as comprising a C=C group and being capable of free-radical polymerization, and

one or more organic photochromic compounds **containing a nucleus of formula:**



; and

polymerizing composition A in the presence of a **water-soluble initiator** to obtain particles of an at least partially polymerized latex with photochromic properties.

Claim 24, therefore includes: (i) an aqueous emulsion; (ii) a photochromic compound containing the above formula; and (iii) a water-soluble initiator. These three elements make claim 24 patentably distinct from the claims in the '710 patent.

**1. Emulsions are Different than Mini-Emulsions**

As Applicants have previously noted, present claim 24 is directed towards an emulsion and not a mini-emulsion. Emulsions are different than mini-emulsions. The Maisonnier Declaration confirms this. This Declaration provides evidence showing that the process for preparing an emulsion is different when compared to the process for preparing a mini-emulsion. In fact, in withdrawing an obviousness rejection in the '773 application, the examiner noted that "there is no teaching of preparing a mini-emulsion of the monomer mixture prior to polymerization" in the present application.

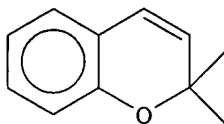
Applicants further note that conventional emulsions (as claimed in claim 24), for example, have larger initial particle sizes. The sizes may be in the range of 1 to 10  $\mu\text{m}$  (*i.e.*, 1,000 to 10,000 nm). By contrast, mini-emulsions (as claimed in the '710 patent) generally have smaller initial particle sizes that may range, for example, from 50 to 500 nm. When producing a latex from an emulsion, the initial particle sizes dissolve and then reorganize into the latex. By contrast, the initial particles in a mini-emulsion process typically do not dissolve prior to reorganizing into the latex.

In view of the differences between emulsions and mini-emulsions, which are produced by different processes, present claims 24-27, 36-39, 55-57, and 62 are not an obvious variation of the claims in the '710 patent. The present obviousness-type double patenting rejection is therefore overcome.



**2. Claims 24-27, 36-39, 55-57, and 62 Are Directed Towards a Photochromic Compound Comprising a Specific Nucleus**

Claims 24-27, 36-39, 55-57, and 62 are directed towards a photochromic compound comprising a nucleus of formula:



The '710 patent does not specifically claim the above photochromic compound. Rather, the method and latex claimed in the '710 patent is not limited to the use of a specific photochromic compound (*e.g.*, "preparing a mixture comprising at least one organic monomer Z...at least one organic photochromic compound, at least one surfactant, and water").

If anything, the photochromic compound claimed in the '710 patent is generic to the specific photochromic compound claimed in present claim 24. The Action has provided no evidence that a person of ordinary skill in the art would have been motivated to use Applicants' claimed photochromic compound with the process disclosed in the '710 patent. This is especially true where the claims of the '710 patent are directed towards mini-emulsions while claim 24 is directed towards emulsions—two distinct types of emulsions. *See above.* Further, the Action presents no evidence showing a reasonable expectation of success of using Applicants' claimed photochromic compound with the claimed '710 process. These are burdens that the Action carries. *See* MPEP § 2144.08[II](A). Additionally, it is well-settled that "[t]he fact that a claimed species or subgenus is encompassed by a prior art genus is not sufficient by itself to establish a *prima facie* case of obviousness." *Id.* at 2144.08[II].

Because the Action has provided no evidence showing that the use of the specific photochromic compound in claim 24 is an obvious variation of the claims in the '710 patent, the present double-patenting rejection cannot be maintained and should be withdrawn.

**3. Claims 24-27, 36-39, 55-57, and 62 Are Directed Towards “a water-soluble initiator”**

Claims 24-27, 36-39, 55-57, and 62 are directed towards “a water-soluble initiator.” The use of a water soluble initiator avoids a prolonged contact between the organic photochromic compound (which can be positioned within the monomer micelles or the monomer droplets, for example) and active radicals (which can be responsible for degradation of the photochromic compound) in the aqueous phase. Therefore degradation of the photochromic compound can be avoided during latex formation. Polymerization starts within the micelles and is continuously supplied with a mixture of a monomer and a photochromic compound coming from the micelles and/or droplets. The present invention could not be implemented if one uses: (i) another type of photochromic compound that does not include the nucleus of claim 24; or (ii) a water-insoluble initiator.

An essential feature of the claims in the ‘710 patent is to prepare a mini-emulsion (not an emulsion) prior to polymerization. Polymerization is then effected directly and locally within the monomer particles which comprise the photochromic compound. This process is not limited to the use of a specific photochromic compound nor to the use of a water soluble initiator as recited in present claim 24. The ‘710 patent, for example, allows fabricating latexes with (i) spirooxazine type compounds (*see, e.g.*, examples 4 and 5 of the ‘710 patent); and (ii) with non-water soluble initiators.

Based on Applicants’ present claims, its proffered evidence, and the Action’s lack of evidence to support the double-patenting rejection, the present double-patenting rejection cannot be maintained. The double patenting rejection of claims 28-35, 37, 38, 40, 41, 58-61, and 63-66 in view of the ‘710 patent should therefore be withdrawn.

**E. Conclusion**

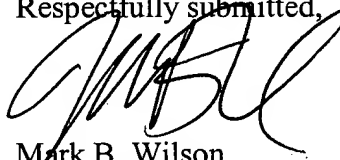
Applicants believe that the present document is a full and complete response to the Office Action dated December 21, 2004. Applicants submit that the present case is in condition for allowance and such favorable action is requested.

**III. A Petition for a Three-Month Extension of Time:**

Pursuant to 37 C.F.R. § 1.136(a), Applicants petition for an extension of time of three months to and including June 21, 2005, in which to respond to the Office Action dated December 21, 2004. Pursuant to 37 C.F.R. § 1.17, a check in the amount of \$ 1,020.00 is enclosed, which is the process fee for a three-month extension of time for a large entity status. If the check is inadvertently omitted, or should any additional fees under 37 C.F.R. §§ 1.16 to 1.21 be required for any reason relating to the enclosed materials, or should an overpayment be included herein, the Commissioner is authorized to deduct or credit said fees from or to Fulbright & Jaworski Deposit Account No. 50-1212/ESSR:052US.

The Examiner is invited to contact the undersigned Attorney at (512) 536-3035 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,



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